This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

THE ANALYTICAL INTERPRETATION

OF THE

SYSTEM OF DIVINE GOVERNMENT OF MOSES.

BY JAMES LINDSAY, M.A., LL.D.

WILLIAMS AND NORGATE,
LONDON AND EDINBURGH.

Price 2s. 6d.

600094518X

THE

ANALYTICAL INTERPRETATION

OF THE

SYSTEM OF DIVINE GOVERNMENT OF MOSES.

BY

JAMES LINDSAY, M.A., LL.D.

WILLIAMS AND NORGATE,
14 HENRIETTA STREET, COVENT GARDEN, LONDON;
AND 20 SOUTH FREDERICK STREET, EDINBURGH.
1875.

[All rights reserved.]

101. i. 234.

PREFACE.

THIS *brochure* is Part First of an analytical interpretation of the Pentateuch.

The author begs to indicate the sources of definite information which have led up to this solution :—

THE BIBLE.
Reading the Bible, by Nicholls : Society for Promoting Christian Knowledge.
Astronomy, Ancient ; Historical Survey : Lewis : Delambre.
Astronomy : Modern Authors.
Egypt : Wilkinson.
Egypt : Bunsen's Repertory.
Etc. Etc.

BROOKLYNN, DOLLAR,
January 1875.

Part II. nearly ready for the Press.

To know something about the One God is the desideratum of mankind, and in the Pentateuch we have the boon of Moses towards that object.

The relation between Creator and creature introduces the element of time-measure by comparison—the One having no beginning of days nor end of years; the other having a small time-measure from birth to death.

Tradition, floating and written, has preserved proofs of the desire of mankind to learn more and more of the heavenly evolutions, which are time-measures in the great eternity; and in the sacred writings of the Jews those known and used in Chaldæa, Canaan, Egypt, and Arabia, have been piously embalmed for future generations.

These numbers, expressive of periods of time unfolded by Sun, Moon, and Stars, are of greater value to the theologian than organic remains *in strato* are to the geologist; they contain the key to the reach, the nature, and the object of the revelations of Moses.

In this *brochure* an analysis of the monotheistic argument of Moses is presented; in the sequel the synthetic whole will be the parallelism of the Pentateuch.

His deductions are based on the tabulated records of the templars with reference to distinct time-marks registered by God's workers,—the sun, moon, planets, stars, rivers, trees, and animals; and the argument then put is that these movements, though seemingly irregular and independent, are so bound to one general law as to educe a convincing belief in a unity of purpose, a harmony in design, and an eternity of duration in a First Causer.

The early Semitic races, who measured their periods by moon revolution, checked by the periodical conjunction with some star of familiar aspect, had adopted a monotheism in the form that their God or time-measure was better than any other: it was left to Moses to announce his great discovery, that all time-measures held as gods or lords in the valley, plain, wilderness, or mountain, were but fragmentary of one great whole; that time-measures for earthly purposes were dependent on God's *worker*, the Sun; and that periods in heaven were regulated by His *goers*, the Stars.

In the narrative of the Pentateuch which is explanatory of the Tables we meet with Egyptian symbolism, where the meaning of hieroglyph is reached through the proper appreciation and evaluation of the apposite determinant figure or form.

Herodotus affirms that the Egyptian templars freely opened their records to inquirers, but that they neither proffered nor accorded any explanation. Moses placed on record in the Ark his tabulated proof as to the *existence* and *all-ruling* power of the one God with determinants evolved by His heavenly bodies in Time. The use of a determinant was universal when language was more limited in *stem* forms, as the same stem had a variety of meanings, of primary, secondary, tertiary, etc., derivation. The translator of an obsolete or a primary form may never reach the full meaning of the original record; and error and confusion have been known to arise in modern times with languages of greater development, and with the facilities of modern intercourse and interpretation. A determinant that would not yield to change, one more enduring than pyramid of granite, the divine numbers of the Jews were those placed in apposition to the heavenly agents symbolized by Moses in his theological argument. A knowledge of the value of these might disappear during periods of conquest or captivity; but the narratory reference to the land of the science or law of things on and beyond Earth indicated the human source of probable recovery.

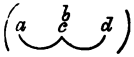
The sacred language of Egypt was more exact and definite than either that of Chaldæa or Canaan; but the comparison of these languages, in their original forms as names of idols or time-measures, led up to the discovery that all language had the common origin of being representations by sound or symbol of the celestial phenomena which mark intervals of time in the great eternity. The sun, rising and setting; the moon, in crossings and in phases; the planets, in elongations, in conjunctions, and in quadratures; the stars, in rising, in culmination, and in setting at certain seasons; the conjunctions of moon and sun, of moon and planet, of moon and star, of planet and planet, and of planets and sun, were each and all suggesters of measures for man during his limited journey on earth. The inundations of the Nile gave strong proof of an annual period; the swellings of the Jordan of a biennial; and the former and the latter rains in Araby educed periods attendant of the equinoctial crossings of the sun. The Egyptian templars had redacted the sequences of plant and animal life for the use of their devotees for hunting, fishing, tilling, gardening; the herding of swine, sheep, or cattle; or the rearing of ass, horse, or camel. The physical law implanted by the Creator, and the natural instinct of animals, formed a register; and any heavenly body that evolved, by phase, conjunction, or revolution, time-periods for the cultivation of crops or production of animals, was set off as the residence of a presiding deity.

In the migratory period, when the appetite was satisfied with the spontaneous productions of nature, the want of time-measures had not always been felt. The settlement in a locality necessitated the consideration of the means and modes of living, and from these exigencies arose the institution of the priesthood for reckoning and revealing what was discovered as to the laws regulating production on land or water, in plant or animal. The reward was payment in kind: and to secure a continuity of official and useful services, it was deemed necessary to confine the knowledge of the temple to the templars. A discovery of an extended law, or one of greater importance to the community generally, emanated from the high priest or his immediates, as they only had full access to the registry of past ages; but to prevent disturbance to the settled affairs of the people by supposititious announcements, any one claiming the rank of the prophet was required to be willing to place his life in the balance as a verification of his new evolution as to a greater god. This concomitant sacrifice of life with failure induced many prophets to commit their predictions to writing on the scroll, but to defer publication till more decided convictions had circumstantially emerged.

These deductions had reference to man physically, to the relation between him and his time-ruler: and in a higher degree to the interpretation of the relation of the metaphysical part of man which connects the man physical and the God spiritual. The inheritance of a divine image within himself, his *alter ego*—the concomitant gift to the being endowed with the "*os sublime*" —involved him in moral responsibility; and the functions of the prophet and priest, which required an interpretation of the will of God as directed towards the duties of the physical and metaphysical natures of man, became onerous and ennobling.

Moses opens the Pentateuch with general deductions which unfolded themselves to his mind after his logic of unity and continuity had appeared to be a fixed law of the Jah; and these periods will fall to be discussed in the sequel.

The logic of the astronomer has in every age partaken largely of the form of an *à priori* argument; the hypothesis being based on the intelligent interpretation of observed phenomena, and belief accorded when the results of long-continued evolutions coincided with the conjectural predictions.

Egypt in the sacred language of the templars was styled Atamiri, or the land where the *movers* for time-measures had all been registered. Every other region was a foreign land, and had the determinant form of two semicircles in contact .

This symbolism had reference to sun positions. The points *a* and *d* represent the positions of sun-rising and sun-setting in east and west, at the periods of greatest declination from the equinoctial, in June and December; and the point *c* or *b* represents the positions in east and west at the equinoctial periods in March and September.

Their language was a scientific representation of phenomena: and the jealous preservation of some of the registers even in the embedded form of a myth or great math or measure, now presents us with a quarry more valuable than Rosetta Stone or temple inscription. The registers in the sun table of Moses present the astronomy of an early date to a scrutinizing view; and the sun periods as in heaven and on earth, the elongations and conjunctions of Mercury and Venus, the phases of *ab* and *al*, the periods of *ab* and *ar*, and the eclipses and transits in the solar system, are nearly abreast of modern discovery. The serene sky of a benign climate, the sieve intercepter of fierce rays, and the continuous system of an institutional caste, led to results little short of the Transit Instrument and the Mural Circle. The discovery was the property of the brotherhood; no individual name was perpetuated; but the name was the expression of the physical truth, and the word was tantamount to a phrase. Thus the moon at full was *abab* or *ib;* at quarterings *abar* and *arab;* and at the change *arar.* The sun at midnight was *arar;* at sunrise, half above and half below horizon, *arat;* at mid-day, *atat;* at sunset, *atar.* The semicircular form of half-moon, or half-sun, was the early letter T of Egypt, and an early Semitic D.

The language of eclipse periods was equally scientific: the partial was symbolized by the diphthong; the annular by the eye of Horus; and the total by a dark circle and the aræer or elder Horus. In language it became in general *ac, ai, nu,* where the initial letter *c* is the astronomical form of a *nu* or half-circle or ellipse, in which the mover has its motion; the *ai* means two in one, or in conjunction; and the *nu* is the complement of the *ac* or *c.* A similar condensation may be observed in the word *i-u-ma,* sea or ocean, where the tidal influence of sun and moon, as *ammun-ra,* was recognised and registered in one word. The word *ma* announced measured: a suffix of *t,* as ma*t,* assured the reader of a test: an additional *h,* as mat*h,* recorded a period of time, defined and ascertained: a number attached indicated the period; and the inspector of the document or register was supposed to be able to recognise the measurer in the anagram, ainagram, apalanatagram, ak-al-ap, arap, abar, sema, cama, transit, or annu.

In the tables of the Chaldæan historian Berosus we meet with similar symbolic numbers, which yield well-known celestial recurring periods. The analysis of his great myth, with his mermen or annudotus in the Red Sea, reflects a valuable light on the Mosaic narrative. His antediluvian period of 432,000 years was a puzzle to the Greek chronologists, who assumed that figures of time-periods must be either lunar or solar. Eusebius, and some of the Byzantine school of chronologists, suggested a lunation or Semitic month as the measure in some of his post-diluvian periods; but a similar application to the Egyptian registers of the ante-Menes period were not generally allowed to be consistent with the valuable deductions of this school, which must have required a continuity of observations, through prolonged periods, for the elimination of errors incident to defective apparatus for observation. They had not the advantage of a good chronometer for the measurement of mean time between two successive conjunctions of moon and star; but this defect was supplied by the mean or average of hundreds or thousands of such conjunction periods, though only expressed in days and approximate parts of a day. The compilers of the Septuagint departed from the apposite numbers of the Jewish table with the view of bringing these opposite pairs within the law of virility and decay in a patriarchal form, thus merging the tradition of their nationality in the belief that the patriarchs of the Pentateuch were the parallelisms of the resident gods of early Egypt. This mistake has wonderfully affected interpretations of Judaism; but the recognition of the just value of the Jewish *preserves* supplies the directions for the removal of this overlying stratum, and for the reading of the Pentateuch in its original form.

It will appear that "man's first disobedience" and "all our woe" are not to be attributed to the woman; that the polygamic allusions are polytheistic time-servers; and that *sin* was a wandering from the ways of the One God who ruled in heaven and on earth, and had planted a tabernacle in the soul for illumination and guidance.

To see a god, and a different god, in a planet, star, sun, moon, or in the periodicities of sea, river, animal, or plant, was the religion of heathendom: the generalization of Moses supplies the foundation of the belief of the Christian.

The following Table is an Egyptic form of the summary of Egyptian astronomy, showing the physical laws or arguments for One God, which form the parallelisms for his metaphysical laws.

Moses was learned in the Egyptian mysteries, the chief of which had reference to the laws of the heavenly bodies. The first table in the Pentateuch, presented in the forms narratory and limited, gives dissolving views of the dawn and wane of time-measure by the orbs of day and night, the inferior planets, the subordination of all moon-revolutions, moon-lunations, lunar and solar eclipse periods to the sun-crossings, which, in their turn, yield place to the star-time.

Name.	Man.	Wife.	Son.	Mysteries?
Adam, . . .	930		130	Eve?
Seth, . . .	913		105	Cain?
Enos, . . .	905		90	Abel?
Kinan, . . .	910		70	Mother of all living?
Mahalalæl, . .	895		65	The Serpent?
Jarad, . . .	962		162	The Serpent spoke?
Enoch, . . .	365		65	Two trees forbidden?
Mathusalah, .	969		187	Satan appeared?
Lamech, . .	777		182	Enmity between seed?
Noah, . . .	500			Serpent no feet?
" . . .	600			Deluge?
" . . .	900			

The solutions of this *anagma* and *ænigma* give the key to the Egyptian system, the basis of the Revelation of Moses.

What is an *anagma* or *ænigma?*

An *anagma* is a measure of time in the great period of Egypt; an *ænigma* is a measure of time in the great eclipse period of Moses;—the former showing a grand unit of measure in eternity, which comprised all other periods, in the logic of the templars; the latter pointing to a great cosmical event which was calculated to educe the belief that there was a unity that governed the "*wandering many.*" The Egyptian astronomer placed this unity in the Sun God. Moses acknowledged the ruling power of the Sun within the solar system, but taught the doctrine that the deity of the templars of *On* was only one of the myriads of the governors or lords under his great King, who ruled in the thunders of Sinai, in the tidal flow of the Red Sea, in the inundation of the Nile, in the daily courses of sun, moon, and star, in the approaches and retirings of the planets,—and who delighted to dwell within the inner temple of the man who craved his entrance.

Is not this tabular erection a labyrinth?

It is a labyrinth.

Where is the entrance?

Read: "All the patriarchs died, save Enoch." Take up Enoch's period, 365.

What do we learn from 365?

It is the well-known Sun period.

Is it a complete sun period?

It was long used as a sun period

What was the amount of error, and how was it discovered?

It was believed to amount to a quarter of a day: and it was discovered by the methods of prolonged Observations and Exhaustions.

Is 365¼ days solar a true sun period?

No; there is no affix of the letter *t* to the Egyptian word *anagma*. If an astronomical representation of the quarter-day had been got from celestial phenomena, the phrase-word would have been *anagmat*, and the period of time, *anagmath*.

What did this quarter-day mean, and how was it obtained?

The evolution of the sun period of 365 days was a great conquest for the early astronomer, and the comparison of tropical phenomena with this time-register gave clear indication of a *lap* of the one over the other. An approximate estimate of the coincidence was 365¼; or 1460 years of 365¼ days would be equivalent to 1461 years of 365 days.

The Egyptian templars had two suns in the heavens, as astronomers of the present day; the one *real*, the other imaginary (*vide* Nautical Almanac, 1873, p. 547, line 18, etc.) The invisible sun was supposed to move after the other, completing a tour in its course or *nu* in 1460 years, and to measure out time for events in heaven and on earth. This was the prophetic sun of Egypt: and the number of days solar (1461 × 365), 533265, was the great Time-measure for cosmical events.

This number 533265 does not appear in the Table?

No, but it is implied; it is not supplied, as it was familiarly known as the great AN or the *Anag.* It included all the smaller periods: it was a multiple of the sun periods now called daily and yearly, and was applied as a multiple of the periods of the other time-evolvers which were about to be superseded in their position.

How are these other evolvers indicated in the Table?

By the study of the numbers, some of which have aspects well known to astronomers, and by the study of the narrative in the Pentateuch, which even in the dress of a derivative language preserves an Egyptian outline.

Have the names of Father and Son the same form in every language?

They have the same significance: and in the cosmological language of Egypt represent cause and effect, the mother being the mathu-ar or measurer of Son-birth. These names are a particularization towards human life of great cosmical laws.

Who is the measurer in the Table?

The planet Venus or the Egyptian Athor.

Any other?

The planet Mercury as a check-measurer: and the great wanderer, the Moon, who, in the language of the narrative and in the records of heaven, is a better time guide than either the one symbolized as woman or the *other under* the cover of the serpent.

The Moon, as appears from the time-table of her crossings, is regular when compared with the evolutions of the forerunners of the Sun, and is entitled to the allegorical language of the tabular explanations.

How is the column marked Wife to be supplied?

From the invert numbers of the column marked Man: thus 930 × 574 are the approximate integral factors of the sun period of 533265: and each number has a similar reciprocal or invert.

Here is the Table:—

	A.	B.	C.	B. Explanatory.	C. Explanatory.
Adam,.........	930	574	130	Venus: period	Transit: period.
Set-hu,.........	913	584	105	"	Transit: period.
Ainu-S′,.......	905	589	90	"	Eclipse: hu.
Ac-ai-nu,......	910	586	70	"	Eclipse: hu.
Ma-halal-æl,...	895	596	65	"	Great Period.
Javat,.........	962	554	162	Mercury: period	Transit: atar.
An-ac-hu,......	365	1461	65	Sun: period	
Mat-hu-Sala-hu,	969	550	187	Moon: period	Sun: Vernal to Autumnal Equinox.
Al-am-ac,......	777	686	182	Star: period	Half invert of Star. hu.
Nu,...........	500	1066			
Nu,...........	600	888			
Nu,...........	900	592		Ab-ar-hu-ma	Luni-Solar. Hu.
SSi-hu,........	364	1465			Mosaic or Ma-Si-Si.

Is the Sun a mover?

It is a mover in this Table: it was regarded as a mover till the time of Galileo. The number 365, an evolution of the Sun, gave the number for the approximate revolution of the seasons: and this coincidence formed the logical connexion between Sun and Earth.

Were there no smaller time-measures in the early, the golden, age of the poets?

The narratory accompaniment has the alternations of night and day, or darkness and light; then the Moon phase, the 7 days lunar, also the phases of Mercury and Venus; and, contemporaneously, the *quasi*-determinatives for season-measure, the eclipse intervals.

There is no distinct announcement to this effect in the narrative?

There is, in part; but the astronomical evaluation of the apposite numbers in this and other Tables to be hereafter presented afford a significant proof as to the truth of the conjecture.

In the sacred symbols of Egypt there were no vowels and no stops; and a letter by itself was a general form of expression, whose specific ideology was to be obtained from some affix used as a determinant. Thus the letter H, read as *hu*, represented a period of time, which might be from sunrise to sunset, sunrise to sunrise, equinox to equinox, new to full moon, a number of lunations, a number of sun periods, any definite period evolved from heavenly bodies, or the periodicity in animal, plant, or stream.

How was the *hu* limited?

By the *Nu:* the horizon was a *nu* to the view; each member of the solar system revolves in its own *nu;*

the tidal waters of the Red Sea and Gulf of Akaba had ebb and flow in a *nu* of twelve hours and twenty-five minutes; a river inundation was a *nu;* a river was a *nu* till bridged or made fordable; a wall was a *nu;* a temple wall was a *nu* or boundary; and a *nu* and a *nu* of the sun-crossings formed the *annu* or *nunu* of 187 × 178 days. This latter form was more determinate and regular than the *nu* of eclipse periods, and had the determinant letter *s;* the twin-crossings of the moon (*vide* Diagram) were the early *asas* of Egypt, and the sun-crossings the Isis of a later astronomical era.

In the particular application to human life there are the *hu* periods, from birth to maturity, from maturity to wane, and from wane to death; the birth and the death are the limits or the nu-nu of the life. In moral teaching, the loves, lives, and evolutions of character are more instructive than movers in space; and national vanity for an equality of ancestral antiquity may have assisted at the birth of the derivative ideology. The Egyptian symbols for *mother,* *measure,* and *death* are *m-t,* generally in modern times read as *mut,* *mat,* and *mut;* the period measured is *h-m* or *hma;* and *hm* is a husband; the birth takes place when the mother is retired from the world, or is in the *al;* and the birth product time is the *ar.* The time-periods of evolutions were *iri,* and the children of the family were the iri of the man and wife. In solar and lunar eclipses there are the dark periods known as the Eyes of Horus in the annular form, as those of Arieris in the arar or (both darkened) total eclipse of the sun. In the case of Venus, the period from Inferior to that of Superior Conjunction agreed so closely to the periods of conception and parturition in the human family and the milk-supplier that Venus has been aptly termed the divine cow. Venus is therefore a fitting type of woman as a time-measure, and the doctrine of immaculate conception is based on this myth.

What has become of Cain and Abel ?

The narrative has it that the measure of abal was well suited for a pastoral people, when animal instinct and food-periods ruled the times of conception and lambing, but that a correct current measure for the seasons of plant-growth, especially in transtropical regions, had not been found in the ac-ai-nu, or eclipse multiples of ab-ar-hu-ma. The phenomena of eclipses when educing the interpretation of an offended deity dispersed mankind, and suggested a flight from tropical regions; but the experience of no escape from these manifestations in earth's utmost ranges induced a reconsideration of the symbol, and the adoption of the idea that it was a manifestation of a beneficent revelation.

A partial eclipse originated the diphthong in Chaldæa, the Ægyptus and Canaan are the Roman forms of the original Aigyptos and ac-ai-nu-ai-nu.

The *ab* was a bright, the *al* a waning, and the *ar* the dark period of a revolving luminary (not self-luminous), and the abal or abar was a period of revolution. The shepherd race reckoned the lunation by 26 days of *ab*; and the dark part of the tour was termed halal or harar. When this period was redacted by comparison and averages, the abarhuma was about 29½ days solar. The full moon was the culmination of the *ab*; the new moon that of the *ar*; and the intermediate half-moons illuminated, abar, were the illuminated initial letters of the Egyptian god Thoth. He is the Mercury and the Moon as Thoth I. and Thoth II. of Egypt, and the Hermes of the Greeks.

The positions of *ab*, *al*, and *ar* in the elliptical orbits of Venus and Mercury are shown roughly in the Diagram; and an inspection of the tables of reference thereto will produce a conviction of their relative value to husbandman and shepherd.

Here is the Table for Mercury from the almanacs for 1872-3-4-5; the exact periods for maximum elongations east and west of the sun, and for those of inferior and superior conjunctions are due to modern calculations; the periods in the Pentateuch of the little and great ab (40 days and 74 days, afterwards 42 and 72) were the results of the average or mean of many records of observations.

Flights of Mercury, Little and Great.

Conjunction Inferior.	Elongation West.	Conjunction Superior.	Elongation East.	Intervals, ab to ab.	Intervals, AB to AB.	Synodic Intervals.
1872.	Jan. 24	Mar. 10	Ap. 5		72	DAYS.
Ap. 24	May 22	June 24	Aug. 3	47	73	120
Aug. 30	Sep. 16	Oct. 13	Nov. 28	44	73	119
Dec. 16	Jan. 6	Feb. 21	Mar. 19	39	72	111
Ap. 6	May 3	June 9	July 16	45	74	119
Aug. 13	Aug. 30	Sep. 25	Nov. 10	45	72	117
Nov. 30	Dec. 19	Feb. 3	Mar. 2	39	73	112
Mar. 19	Ap. 15	May 24	June 28	44	74	118
July 26	Aug. 13	Sep. 7	Oct. 24	46	72	118
Nov. 15	Dec. 2	Jan. 15	Feb. 14	39	74	113
Mar. 1	Mar. 29	May 9	June 10	43	73	116
July 6	July 27	Aug. 22	Oct. 6	47	71	118
Oct. 30	Nov. 15	Dec. 26	1875.	40		
		Mean	flight,	$43\frac{1}{6}$	$72\frac{3}{4}$	$115\frac{11}{12}$

The Synodic period of astronomers (mean) is 115·877 days.

Flights of Venus, Little and Great.

	I.C.	E.W.	S. Con.	Elon. East.	ab to ab.	AB to AB.	AL to A L.
1872			July 16				
1873				Feb. 22			
	May 5	July 15			143		293
1874			Feb. 23	Sep. 29		441	294
Transit	Dec. 9						289
1875		Feb. 18	Sep. 23		142		288
Periods	583	583	587	584			
Synodic.			587				

Astronomical mean, 583·92 days. The Transit Observations of 1874 may modify results.

Here is the luni-solar AB-AL periods of moon-phase, 1873, containing twelve lunations of *ab* and *ar*, an approximate recorder of sun-measure, and where the time may be reckoned in sun-days or in moon-days.

1st Quarter.		Intervals.		Moon Full.		Intervals.		3d Quarter.		Moon New.		Days from I. to III. Quarters.		1873.
D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	
5	9			13	4			21	9	28	6	16	0	Jan.
35	9	30	0	43	12	30	8	51	11	58	3	16	2	Feb.
65	9	30	0	73	6	29	18	80	10	87	1	15	1	Mar.
94	7	28	22	102	10	29	4	110	6	116	11	15	23	April
124	1	29	18	132	11	30	1	139	11	146	9	15	10	May
154	6	30	5	161	10	28	23	168	4	175	9	13	22	June
183	11	29	5	191	7	29	21	197	9	205	11	13	22	July
213	3	29	16	220	2	28	19	227	5	235	2	14	2	Aug.
243	4	30	1	249	9	29	7	256	4	264	6	13	0	Sept.
272	3	28	23	279	6	29	21	286	6	294	11	14	3	Oct.
302	10	30	10	308	4	28	22	315	1	324	4	12	15	Nov.
331	8	28	22	338	4	30	0	345	10	353	7	14	2	Dec.
360	4	28	20											

The columns of intervals show fluctuations in monthly period, in fortnightly period; any one may deduce the intervals in phase or week period—a necessity for more certain and regular measure will be the evolved conviction; phases vary from 5 days 18 hours to 8 days 10 hours; average, 7·7 days solar.

The amount reckoned on the fingers, or 10 average phases, was 77 days.

Average lunation on these 12 records, 29·566 days; average of modern astronomy, 29·530588715.

But the day lunar is different from the day solar mean time, as per Table :—

Means of Meridian Crossings, from Nautical Almanac,
1873, *in Hours, Minutes, and Hundredth Parts.*

	H.	M.	DEC.	
January, .	24	50	24	
February,	24	50	24	
March, .	24	50	32	
April, . .	24	50	66	
May, . .	24	50	31	Moon. Daily Motion.
June, . .	24	49	64	Least moon-day, 1479 minutes.
July, . .	24	49	36	Greatest „ 1505 „
August, .	24	50	69	Mean „ 1490 „
September,	24	51	32	
October, .	24	50	83	
November,	24	50	40	
December,	24	51	11	
Average,	24	50	42	in minutes, 1490·42; moon-day, 24 hours 50 minutes.

The solar day is a variable measure; here is the law as given in the Nautical Almanac, 1873:—

Mean of Meridian Crossings of Sun in 1873: from January till April 15th, the sun behind mean time of clock; from the latter to June 14, sun before clock; from this till August 31, sun behind; and from that date till December 24, the sun in advance.

For 190 days the sun is behind; for 175 days sun is before clock; these errors are given in almanacs as *equations* between sun and clock time, and when added in their respective columns of positive and negative, give about 22 hours.

Mean sun-day, 24 hours, or 1440 minutes.
Least „ „ 1424 „
Greatest „ „ 1454 „

Early Semitic Time Comparison. Star and Moon in Conjunction.

Star measure of moon period of return, 27 days and a fraction.
Moon measure ,, ,, 26 ,, ,,

The ratio 26·3, 27·3, is a fair approximation to that between sidereal and lunar time.

Luni-solar Time in Moon Phases.

Sun measure of phase, 29 days and fraction.
Moon measure of do., 28 ,, ,,

From which solar to lunar as 28·5 to 29·5, or as 57 to 59.

The sidereal day is 23 hours 56·04 minutes: 1436·04 minutes.

These are the measures of *ab* and *al;* a star is an *ab* by night, an *al* by day.

A more correct measure than that of *ab* and *al* is got from her crossings. Here is a Table of the Moon-crossings of the Equinoctial; the right ascensions show the distance of the crossing of Northing or Southing from the first point of Aries or Vernal Equinox crossing of Sun's path, evolving the fact that the Moon moves more than thirteen times faster than the Sun.

	Northings.		R.A.	AK. Intervals.		Southings.		R.A.	AK. Intervals.		
	D.	H.	H. M.	D.	H.	D.	H.	H. M·	D.	H.	
Jan. 4.	4	22	0.40			19	12	12.39			
	32	5	0.38	27	9	46	17	12.37	27	5	**Mean ak, 13·666 d.**
	59	15	0.37	27	10	73	23	12.37	27	6	
	87	2	0.37	27	11	101	5	12.36	27	6	
	114	11	0.36	27	9	128	13	12.36	27	8	**Mean ak-ak 27·332 days.**
	141	18	0.36	27	7	155	22	12.37	27	9	
	169	0	0.37	27	6	183	5	12.35	27	7	
	196	5	0.35	27	5	210	12	12.34	27	7	
	223	12	0.33	27	7	237	17	12.32	27	5	**The measure by this system is am-ak-ak-a Makka. Mecca.**
	250	21	0.31	27	9	264	23	12.32	27	6	
	278	8	0.31	27	11	292	5	12.31	27	6	
	305	18	0.31	27	10	319	13	12.32	27	8	
	332	2	0.31	26	8	346	20	12.30	27	7	
Dec. 26.	360	7		28	5						

N.B.—The columns of R.A. prove points of crossing to be variable, but intervals of ak are approximately regular. One hour of R.A. is 15° degrees of Equinoctial.

Table of Star-crossings of Meridian, Nautical Almanac, following 1st point of Aries, in hours, minutes, seconds, and decimal parts.

			Aries F. Pt.				Intervals in 30 Days.			
			H.	M.	S.	DEC.	H.	M.	SEC.	DEC.
January .	1	1	5	14	19	23	1	57	57	34
January .	31	31	3	16	21	89	1	57	57	27
March . .	3	61	1	14	28	71	1	57	57	22
April . .	1	91	23	16	31	49	1	57	57	26
May . .	1	121	21	18	34	23	1	57	57	33
May . .	31	151	19	20	36	90	1	57	57	37
June . .	30	181	17	22	39	53	1	57	57	36
July . .	30	211	15	24	42	17	1	57	57	28
August .	29	241	13	26	44	89	1	57	57	23
September	28	271	11	28	47	66	1	57	57	25
October .	28	301	9	30	50	41	1	57	57	33
November	27	331	7	32	53	09	1	57	57	38
December	27	361	5	34	55	71				

These mean times at Sidereal Noons, at intervals of 30 days, differ only in hundredth parts of a second, a proof of the regularity of Star motion.

But there is a change in Right Ascension of Aries F. pt., and of any star always in progress, as may be seen from this table from the Nautical Almanac.

We select the Star Aldebaran, the familiar of the Arabians.

		Interval.	Right Ascension.				Variation.
		Days.	H.	M.	Sec.	Dec.	Second.
1873. January...	1	100	4	28	38	26	1.24
,, April......	11	100	4	28	37	02	1.19
,, July.......	20	100	4	28	38	21	2.93
,, October...	28	60	4	28	41	14	0.78
,, December	27		4	28	41	92	

This variation is due chiefly to Precession and Nutation.

Hipparchus is credited with the discovery of Precession about 125 A.C.

A Time Measure that superseded that of ABAL was that by Eclipses.

Eclipses occur when truncated cone of sun's disc and moon's disc passes in the line of the earth's position; when moon in conjunction with sun and within 17° 21′ 27″ of her node, a solar eclipse; when moon in opposition with sun and within 11° 25′ 40″ of her node, an eclipse lunar.

There may be 7 eclipses in a year; there must be 2 in the year; there are two solar eclipses annually. There are usually 70 eclipses in 18 years; of these 49 are solar, 29 lunar—on the average.

The law of eclipses is more regular than shinings and wanings of Venus or Mercury; not always visible in same locality; the interval between two in succession of the same nature, a time-measure as an *ac-al-ap;* a similar period with no eclipse visible at the same locality was a measure as an *ac-al-am;* the one or the other being the meeting of Isis and Osiris in early Egyptological science and celebrated in the Feast of Lamps.

Here are the manifestations of Sun and Moon for 1873 (*vide* Diagram):—

Days.					Eclipses.	
January, .	0	0				
February,	0	31				
March, .	0	59				
April, . .	0	90				
May, . .	0	120				
„	11·5		May	131·5	Lunar.	
„	25		May	145		Solar.
June, . .	0	151				
July, . .	0	181				
August, .	0	212				
September,	0	243				
October, .	0	273				
November,	0	304				
„	4		Nov.	308	Lunar.	
„	19		Nov.	323		Solar.
December,	0	334				
January, .	0	365				
Intervals, ...					176·5	178

Diagram III. contains these ac-al-ap-at time-measures since 1820, from the al-am-an-acks Nautical, Whittaker, Orr, Oliver and Boyd, showing the entrance of the periods of the J-ac-ab (147 days) in the registers of eclipses, the twin periods evolved by these celestial phenomena, the law of J-ak-ab in the Iusiph, and the failures of an eclipse phenomenon as a revealer of settled order in heavenly arrangements in the early astronomical period of Egypt.

An inspection of this interesting table opens up glimpses of the connecting links of time-reckonings in early periods; the simple lunation of the shepherd or abar, a period of going and shining (*ab*), and of retirement and apparent rest (halal or dark *hu*) appears in the great hu-ab of eclipses used in the land of Misr; the period of gestation of the sheep and goat tribe has the emphatic brand of heaven in the twin periods of 148 and 147 of the solar evolutes; the Jacab of 147 days is sometimes in the lunar as well as in the solar, and the tracings of crossings from the solar to the lunar columns have an affecting family record in the Pentateuch. The Joseph and his little brother have their representatives in sun and moon tables; the brethren of Joseph are of Abrahamic descent, as the iri between a Jacab and a Jacab are 6 periods of an abar of 29·5 days. The Egyptian dress of Joseph was Iusiph, a phrase word of which the narratory part of the Pentateuch presides at the philological interpretation.

It must be kept in remembrance that these periods tabulated are the eclipses of calculation, those visible and invisible at Greenwich; and they are herewith presented to point out the periodicity of these celestial phenomena, and to illustrate the wonderful importance attached to these occultations in the dawn of civilisation. Two eclipse periods of 177 days formed the year of the grain-grower: in tropical regions, of high temperature, the one element for growth and maturization of plant was a periodical supply of moisture: the periodical rains were in connexion with a sun-period, untrammelled by moon, of 365 days: so that successive measurements by 354 days ran the periods of seed-time and harvest frequently out of the chance of moisture, and led to recurring periods of famine. No wonder that Ac-ai-nu reckoning was driven out by the Sun-lord of Egypt as a land-marker; and no wonder that this power of continuity of law in the heavenly evolutions, as exhibited by this Diagram III., should obtain a place in the great demonstration of Moses. In the solar column there is one long period of 208 days, of which more hereafter. The period of Isaac, 180, is not to be found in these columns: and the reader will bear in mind that Isaac of the narrative went not down into Egypt. It is well to observe here also that the eclipses of the full moon-period (lunar) have an intermitting law, arising from the greater wandering of the moon; and that those of the new moon (solar) have at least their never-failing supply of two. This regularity of eclipse solar did not suit, however, for the calendar of food-supply even in the tropical district of Egypt, and was altogether worthless or deceptive for that purpose in districts of one growth-period in the year. The sun-crossings of March and September when joined to form one *nunu* was the multiple for land produce: and the AN or Sun was assigned the chief place in the pantheon of the templars.

Akin to these celestial marks of eclipses are those of transits; the performers in this case are the Inferior planets, Venus and Mercury. The discovery of these phenomena is claimed for Modern Astronomy: but a perusal of our Sun Table will satisfy the reader that astronomical knowledge had passed through an eclipse-period, and that the light of Moses had passed through an *arab* or darkening phase.

In our Diagram I. the position of inferior conjunction is not always in a direct line joining the Sun and Earth: it is generally above or below that line: and in particular cases it is seen to cross the Sun's disc and form a transit.

Here is a Table of well-recorded transits of Mercury:—

		Authority.	Where?	Intervals.	Law.
1651	Nov. 3	Gassendi	Paris	Nov. do. 26	46 years a cycle for November transits: and 46 years a cycle for May transits.
1661	May 3	Helvetius	Dantzic	184	
1677	Nov. 7	Halley	St. Helena	May do.	
1753	May 6	De Barros	Paris	92	
1799	May 7	Schroeter	?	46	
1845	May 8	Nautical Almanac		46	
1861	Nov. 12	,,	,,		

But this law does not disclose the successive recurrent transits of the planet; there must be a connecting link between those that occur in May and November. The path of Mercury cuts the plane of the ecliptic in two places, which are called the nodes of that planet: these occur regularly and periodically in May and November. The following Table evolves this periodicity:—

		Intervals.	
1832	May 5	3 years + 186 days	Sum of these three intervals: 13 years + 188 days.
1835	Nov. 7	9 years + 182 days	
1845	May 8	3 years + 185 days	
1848	Nov. 9	13 years + 3 days	
1861	Nov. 12	7 years − 7 days	
1868	Nov. 5		

An exact period of recurrence of same date in these Tables is to be found in November 7 of years 1677 and

1835; this gives a period of 158 years of 365 days or 162 years of 356 days.

In the Table of Moses 162 years are registered: it remains to be seen whether these years are solar, lunar, or a Sethu.

In manuals of modern astronomy transits of this planet are said to follow in successions of 13, 13, 13, and 7 years, about the periods of May and November, a regulation due to the heliocentric position of its nodes. Modern astronomers give comparatively little attention to them, for the reasons of their unimportant character and the difficulties attending their true determination. Copernicus was never able to record a transit from obstacles of an atmospheric nature.

The transits of Venus happen in June and December, according as the planet is passing through the descending or the ascending node of its orbit. The intervals between the successive transits, counted in years, are—8, 105½; 8, 121½; 8, 105½; etc. (Grant.)

The following is the cycle given by Nichol: 8, 122, 8, 105 years respectively.

The summations of the periods of Grant and Nichol amount to 243 years; the long inequality of Venus has been reduced by the theoretical investigations of Airy to 240 years. The recent observations of the transit may be productive of harmony between theory and observation. The periods of Moses are 130 and 105: thus observations of astronomers of the pre-telescopic age are wonderfully in harmony with those of modern times.

These transits have a greater importance than those of Mercury, as, to use the words of James Gregory, "ex talibus enim solis parallaxis investigari poterit." This parallax of the sun furnishes an argument or measure for the relative distances, magnitudes, etc., of the members of the solar system; and the expedition of Cook to Tahiti in 1769 was undertaken for this object of national and world-wide importance.

It is placed in apposition to the Venus revolution by Moses for the purpose of showing that these revolutions within the solar system in the heavens are compatible with certain evolutions of periods on earth, and her immediate attendant, the moon; it formed a measure or argument for connecting earth and moon with sun, and his two attendant moons. It exhibits the Egyptian logic of the solar or rather earthly system.

Here is the limited Table of modern observation with respect to the transits of Venus:—

1631. Dec. 6-7. Predicted by Kepler: sought for by Gassendi: not found.

		Where.
(Nov. 24, o.s.) 1639. Dec. 5.	Horrocks. Crabtree.	England.
(Dec.) 1761. ?	Hirst.	Madras.
	Lalande.	Paris.
	Bergman.	Upsal.
	La Chappe.	Siberia.
1769. June 3.	Cook, Greene.	Tahiti.
	Maskelyne.	Greenwich.
1874. Dec. 9.	Various.	Various.

The reader should bear in mind that the earth revolves on its axis in sidereal time, or one revolution is 86,164 seconds; that it completes its orbit in 365·2563744 mean solar days of 86,400 seconds, or in 366·256798 sidereal days of 86,164 seconds; and that the tropical revolution, that of the seasons, from vernal to vernal equinox, is 365·24222 days of mean time solar,

366·242488 days of time sidereal,
353, nearly, days of mean time lunar.

These digressions about time-measures of astronomers have been made for the purpose of introducing the reader to a full view of the Mosaic argument, which is now to be entered on more closely; but it will be necessary to explain the cause of the introduction of the number 364 in the column of registers. It appears here as the invert of the great sun-period 1461 years of 365 days, when expressed in the stellar time-period of

1465. This 1465 is 4 × 366¼, the year-measure of Egypt in stellar days: and 364 × 1465 = 533,260.

But it has another point of view. Thus in modern astronomy, with good chronometers and telescopes, the sidereal day is found to be 86,164 seconds, the mean solar day, 86,400 seconds. The difference is 236 seconds; and the reader will find that this 236 is the 1-366th part of 86,400, which means that the sidereal day is less than the solar mean day by 1-366th part. The Egyptian astronomer, with no good clock, but with patient and prolonged registration, had deduced a law somewhat similar; their numbers were 365 and 364: and the sidereal day for earth was considered to be 1-365th part less than the solar mean. This 364 is the common calendar of the Pentateuch; it enters into the register in the tabat of the chest or ark; it was, in his theocratic community, to supersede the reckoning of 354 days, or 12 of the abar; it was to form a line of separation of the people of his one God from either the worshippers of Sun or Moon god; it was to bring down the periods in heaven to earth, so as to be an effectual interposition between the periods of rest from labour among the Jews and those of neighbouring tribes, who had their periodical feasts of religious ceremony grossly intermingled with the most profligate species of debauchery.

To return to our Table:—

The columns A and B are evolutes within the *nu* 533,265; as the one is the reciprocal of the other, the derivative man and wife is an appropriate form for a moral evolution of human representatives. Venus and Mercury are the attendants and dependants of the sun-lord. Venus is seen early and late, and her periods of al and ar are suggestive of the lord's wife. Mercury is the confidential man-servant, the right-hand man of the shepherd king. The one is the Sarah, the other the Eliezer, while the moon is the Egyptian maid Hagar. Venus was the mother, the ma-t-ar-hu, the typical measure of the dark periods of conception and births, and the symbolical mother of all living. The first five registers belong to her, and are averages of her revolution between certain definite periods. The Jarad is a plural or multiple form of Mercury. The sun number 1461 follows next, and then 550, a moon multiple. The other numbers will be discussed afterwards.

We now come to column C, which discloses the astronomical knowledge and logic of the templars of Egypt, Canaan, Chaldæa, and Arabia. The first entry is 130; it is in apposition to a Venus-period, within a Sun *nu*, and is it not a transit marker? It is placed, after the templar form, as a determinant; an Egyptian determinant of decision was symbolized by stone-striking sound and emission of light, called *set.* *Set* was a generic name for a particularly determinant time-measure or god in Western Asia; and here we have this limited time of 130 revolutions of sun time on earth entered with a Venus-period, a sun attendant, with the view of questioning the heavenly records as to the possibility of the connexion between the periods above and the periods sublunary.

The second number is another transit-period of Venus; in apposition with 584 it evolves equivalent evolutes, which, taken along with those evolved by 130 and 574 above, educe a probable relationship between Sun in heaven, Venus, Moon in heaven, Sun in earth periods, and Moon in animal periods, thus—

Days.	Days.	Days.	Days.	
574 × 130 × 365	365 × 210 × 355⅓	365 × 210 × 13 × 27⅓	287 × 260 × 365	Equivalent Evolutes.
584 × 105 × 365	365 × 365 × 168	365 × 182⅓ × 336	292 × 210 × 365	

What is learnt from these evolutes?

That the periodicities represented by these numbers are compatible with each other in the Sun nu, thus—

365 is a sun-period in heaven and on earth as in the seasons.
355⅓ is 13 twin crossings of the moon.
336 is the periodicity of the ass and horse.
287 is the periodicity of the cow and the human race *abar.*
27⅓ is the lunar twin crossing in sidereal days.

It is to be observed that 365, the sun-period, occurs in every evolute; that the transit of Venus as 210 is in both; that a Mercurial transit, 13 × 365, is in the former; and that periodicities of animal life are evolved in both.

What do the numbers 90, 70, and 65 represent as determinants? The first, 90, is a multiple form of the Chaldaic *saros*, or eclipse-period of 18 years; the second is a multiple form of the Egyptian eclipse-period of 14 years, and at the same time two-thirds of the transit-period 105; and the third, 65, is the one-half of the transit period 130.

Here are these in evolute and equivalent evolutes—

365×90×589	365×150×354	365×147·5×360	365×300×177	365× 180×294
365×70×586	365×112×366½	365×105 ×130×3	365×225×182	365× 350×117
365×65×596	365× 52×745	365× 26 ×1490	365×208×186	365×1300×29·8

Here we have—

365	sun-period.
354	period of 12 × 29·5, or twelve periods of ab-ar-hu-ma.
147·5	a jacab period, or five ab-ar-hu-ma.
177	an ordinary eclipse-period, or six ab-ar-hu-ma.
180	an isaac period: mean of sun and moon crossings.
182	one-half of star invert.
117	a period of Mercury.
225	an orbit of Venus.
105 × 365	a transit-period of Venus.
130 × 365	do. do.
13 × 365	do. Mercury.
1490	a moon-period: the period of the Great Ael of Moses.
208	an eclipse-period, as in Eclipse Diagram.
29·8	an average ab-ar, as in Diagram III., etc. etc.

These five are evolutes from the abal or alab, which is seen on the one side of sun as morning star and on the other side as evening star; the arab or the abar of birth-periods, and the revealer of the templar evolutes of the Apis, Mnevis, or Bull worship of Memphis and Heliopolis.

The next we take up for evolution are known from their names and apposite numbers to refer to Mercury, the Earth, the Moon, the Stars, and the *Nu* of the ab-ar-hu in lunation—

365×162× 554	365× 13×12×5×111	365×120×748	365×324×277	
365× 65×1461	365×260×365½			
187×550	275×374	137·5×748	27·5×20×187	365×20×27·5
178×550	275×356	137·5×712	27·5×20×178	
686×182	364×343	52 ×7×7×7×7	$7\frac{3}{7}$×7×7×7×7×7	365× 3×114
900×592	29·6× 20×900	18000×29·6	180×148×20	30×888×20

Here we have the evolutes :—

365 × 13 = a sun-period measured out by transit of Mercury.
162 × 365 = a plural form of the same.
111 × 5 = a plural form of synodical revolution of same planet.
324 = a summation of eclipse-periods 177 and 147.
748 = the connecting link between Mercury and Moon, Thoth I. and Thoth II.; and the elder twin of Sun-period 1460 = 748 + 712.
$\left.\begin{array}{l}187\\178\end{array}\right\} = \left\{\right.$ the Sun crossings, showing Moon-periods of sema in evolution.
137·5 = the number of Sarah; a plural form of sema; an iapt.
364 = the invert of stellar equivalent of Sun-period 1460; the representative ratio of Moses.
343 = the aav-nu of the Sabæans; the stratum of the great lunar seven.
180 = the Isaac period; the average of 354 and 366, or of 177 and 183.
148 = the twin of Jacab; the Æsau.
$\left.\begin{array}{l}30\\29\cdot6\end{array}\right\} = \left\{\right.$ the alternative forms of the ab-ar-hu-na (lunation).
600 or 20 × 30 = the *nu* of lunations of Moon and Venus, etc.

The attention is directed to the evolutions of Lamech; the factors $7\frac{3}{7} \times 7 \times 7 \times 7 \times 7$, where the plain 7 occurs five times, and the lunar 7 or mystical 7 ($7\frac{3}{7}$), whose meaning will be explained in the sequel.

These are well-defined time-markers evolved by God's workers, each performing in its own sphere or nu. We add one or two equivalent evolutes :—

$1500 \times 355\frac{1}{2}$; 2400×222; $3000 \times 177{\cdot}5$; $1490 \times 357{\cdot}8$.

These evolutes open up to the reader the astronomical method of past generations, and the recurrence of these evolutes, at stated times, and by bodies out of juxtaposition, led up to the idea of a governing Lord. Some nations or tribes, so named after their god or time-measure, preferred the one that suited the operations of their means of living. The moon, by its crossings or its phases led up to faith in the cross or the crescent. The star and sun, as daily and periodical exponents of passing time, became the king among others. The sun of 365 had been found to be misleading, and an approximation to our modern system had emerged from the experience of many observers. The sun of 365¼ was the great discovery of that era. It still holds ground, with occasional allowances or corrections. The historical periods of these, in more modern times, are connected with the names of Julius Cæsar and Pope Gregory.

The rule by shiners and waners, whether by Venus, Mercury, Moon, or any other planet, had resulted in a displacement of the seasons for the growth of food for man or animal; and in this respect all these gods or time-measures had become subordinate to the Sun-lord or Ak of the Egyptians.

The small ak or ak-ak of the moon gave way to the larger and nearly multiple ak-ak of the sun; the smaller measures were then acknowledged to be fragmentary of the larger; and the calendars of Asia, Europe, and Africa passed through phases of adjustment. Among the archives of the Temple were deposited the old markers, as useful historical markers of the development of human knowledge in things divine; and those left by Moses in the Ark have been preserved in that interesting narrative concerning the change from one *nu* to another, which preserves minute detail, in scientific form, the connexion between things new and old. The Egyptian term ap-hu-al-a-a-t has been corrupted by combining the letter *p* and *h*, regarding it as a *f*, changing the final *t*, emblem of measurement, into *d*, and assuming that the idea of stream of time was synonymous with or confined to water. The Egyptian word *na*, water, is a derivative; the word *nu* is the generic form.

Before presenting the *Pre-an* or *flood*-table, a glimpse at the Mosaic system of time-redaction will contribute materially to a proper interpretation of its meaning.

The Mosaic was the improvement on an improvement. It was to supersede the ap-hu-iri-ra, or sun-system of Egypt. This sun-system was an improvement on older forms, of which more after the flood. Moses, by comparison with the registers of Jethro, the priest of Am-at-at-ia-nu, dweller by, and observer of, the ebb and flow of the waters, or the *nu* periods in the Gulf of Akaba, the twin fork of asazr, both of the Arat (Red, Tesher) Sea, had discovered and learned that events in heaven, as the thunderings on Sinai, the former and latter rains, the periods of quail migration, the am-ai-nu periods, the floods of tide, etc., were not consistent with the time-god of Egypt, 365¼ days. The narratory part of the Pentateuch befigures a shortening, a circumcision of the ap-hu-al-al; and the critical reader of that narrative, and the Mosaic whole, will be able to discover or disposed to allow that his period of new measure is 365⅐ days. It is allowed that this is not quite apparent to the ordinary reader, but, remembering that the Mosaic year is made up of weeks, has a periodicity every seven years, and has a greater periodicity of fifty years, he will perceive how all these conditions are fulfilled by the period of 1⅐ days capping the underground of the calendar for his ordinary year in the *flood*-table. *It* is given as 364 days, which is a multiple of 7, and therefore a year of weeks. The odd period is *thus* allowed for, and disposed of in weeks. The error of the one day is allowed to run on for seven years, and in the seventh year that error, amounting to seven days, or one week, is admitted, and allowed for as an additional week. An additional week in every septennial period is the correction of this error of currency. The part of a day ($\frac{1}{7}$) is allowed to rest over till the accumulation has amounted to a week. Thus 49 × $\frac{1}{7}$ part of day is equal to a week; but as the 49th year had an addition of cumulative error from the greater correction of the day error, the reckoning was postponed till the 50th, the year of Jubilee, or J-ab-al-abee, or great period of rectification.

Y.	Mo.	D.	Year 601.				D.	Formula.		Stellar.	
601	1	30					30				
	2	29	601 1 17				30	7		7	Lunar phase.
	3	30					30	40		40	ab. Mercury.
	4	29					30				
	5	30					30				
	6	29	601 6 17	147	ak-ab	150	30	150		150	ab. Venus.
	7	30					30				
	8	29					30				
	9	30	601 9 1	73		74	30	74		75	ab. (large) Mercury.
	10	29					30				
	11	30					30	40	Raven	40	ab. Hawk.
	12	29					30	x	Dove?	40	ab. Thoth I.
		354					360				
							5	7		7	Thoth II.
602	1							7		7	"
	2		602 1 27	144		146					
				364		370	365	325+x		366	

This Table exhibits the change from the lunar of 354 days to that of Moses, 364. The narrative refers to the period when the year of Egypt and Persia consisted of 12 months of 30 days each, and a correction of 5 days to each year. The column with the x days contains a general formula for lunar, stellar, planetary, or river period; the 325 is the summation of 178 and 147, two eclipse periods; if 29 be added, the year 354 of twelve lunations, or of twice 177 (eclipse iri) is got; if 40 be added, then 365 is the result; and the addition of the apposite number will render the amount for Jupiter, Saturn, or Mars in half-period.

Was the calendar of 354 days the most ancient in Egypt?

The calendars of Egypt and of the Jews still retain evidence of a smaller law of time-register than the lunar year. It was named the AB, the period of 120 days, a period of Mercury, or of four lunations somewhat extended to make a measure of the sun-period. Two of these in one was termed an ab-ab, or in the plural form ib; and the time-period strictly became hu-ib, hib. The ibis religiosa, the devourer of snakes, made its appearance about 240 days after the disappearance of all traces of the inundation, and for this recurring migration was named *Hib.* The Jewish calendar has its eight-month period of Abib, and four-monthly marker of AB. The *abib* should either be Abab, the

Semitic form of duplication, or it is an indication that the *ib*, or eight months, formed a law, or *ab* in a transition period. Mercury was then in the ascendant with some, the lunation with others. The early *ab* was 112 days, and the Hermes Trismagistus was 336 days. The periodicity of the sow is 112 days: and these periods have reference to swine-herd and root-eating eras of civilisation. The fit habitat for such people and such pursuits would be marshy district abounding with edible-rooted plants, as Lower Egypt, the Jordan valley, the terminal valleys of Pharpar and Abana, or the spreading forests of primeval times. For these the shepherd had no regard; the habitat of the sheep was the hill-side or upland plain, but famine and drought oft sent them in search of the swine-herd's locality. The god of the heathen swine-herd, or shepherd, was the periodicity of his herd or flock; and his object, to find fitting food-periods and localities for their well-being. The moon was king in the animal calendar; but the sun ruled in the food calendar. The supremacy of the moon was established in the solar eclipse, but the power of the sun-god was paramount in the eclipse lunar. The sun as a daily mover was a *sub* of the moon in the phase or crossing; but the sun of the annu or double crossing was supreme. The term god involved the idea of more definite sway than that of *lord.* The God of Abraham was a lord, when it was

119 days, one-fifth of an Athor period, checked by S-ara, or the definite average of Mercury. The change from Sara to Sarai indicates a change to an eclipse-period of 177 days. Hagar is the *hu-ac-ar:* and the adoption is typified in the name Ishmail, a year of 177 and 177 days. The first time-measure was a s-ar-ab, or s-ar-ap: the second was an ac-al-ap: the third *iri* (son) was 180 I-s-hu-ac, the fixed average of sun a'c, or crossing, and a sittennial of moon crossing. His faith (ap-hu-ai-t-hu) passed from the shiners and waners, lords, to the god of the ai-hu-ab; and in Keturah returned to the shiners in lunations and stars. He separated from Lot (al-at), as the shiners did not mark the grass-periods of the valleys; and scattering and a new faith were essential to preservation of man and beast. The *abar* is 29·53 days; in the calendars of Greece, Judæa, Egypt, and of Mohammedan countries, the abar is regarded in the alternating periods of 30 and 29 days. The modern arrangement of months in Britain has nothing but custom for its recommendation.

As formerly hinted, the templars had two suns: the one real, the other ideal. The astronomers have a real sun and a mean sun; the calendars of the Churches that observe the feast of Easter have an ecclesiastical moon. The Egyptian ideal sun moved in its course behind the real sun, and lagged one-fourth of a day in a year. It never overtook the real sun; but the real sun of their system (365) overtook the ideal one in 1461 years. The ideal sun was their prophetic sun, and time-measure for regulating the seasons. In this, however, they were somewhat in error, as the tropical year is somewhat shorter on account of the precession of the Equinoxes. The modern astronomer attributes this discovery to Hipparchus of Rhodes and Alexandria, about 125–150 A.C. The analysis of the term Hipparchus reveals a phrase-word, the hu or period of the apophis or great sarap; the ar-ac-hu, and hu of the crossings of the sun annual. The word Zipporah is of the same import; and each of them is the name of a physical phenomenon corrective of a received law.

The historian of astronomical discovery feels the deprivation of the Alexandrian Library; and the astronomers of the pre-Christian date seem to have been separated from a former effulgent period of astronomical discovery. The reduction of all time-measures to two formulæ was the master-work of Moses; and the appreciation and evaluation of the theological argument in the physical world and metaphysical nature of man urged him to that declaration of truth which sapped the foundation of heathenism, destroyed the first-born time-measures of Egypt, scattered idols, lords, and gods to the four quarters of the world, and absorbed the monotheistic pillars on the foundations of the stones or pillars of Abraham, Isaac, and Jacob.

The precession of Hipparchus was one degree of longitude in 100 years; the Arabian astronomers of that period made it about one degree in 66 years, the one giving 36″, the other 54″ per annum. The true value is about 50 seconds of arc in the year, which amounts to an arc of 13° 55′ in a thousand years, and to a sign of the Zodiac in about 2160 years, and a zodiacal-tour in 25,868 years.

The year of the seasons is not 365·25, but 365·24222 days; and the ideal sun of Egypt in its lagging of $\frac{24222}{100000}$ part of a day annually, would require 1508 years for its *hu*.

The amount of error in sun-period of Egypt was considerable, the difference between 365·25 and 365·24222 amounting to 778 days in one hundred thousand years. In our common experience, or in geological epochs, this error would be neglected; but in prophetic use, in the art of prediction, in the revealing of the laws of God to man, certainty was required; and the establishment of a claim to prophetic skill had to incur the risk of the sacrifice of life.

The Shin-period[1] of Moses was 365$\frac{1}{7}$; his ideal Shin lagged $\frac{1}{7}$th of a day, and made a tour of the heavens in

---

[1] *See* Part II.

2556 years. This lagging sun was the prophetic Shin of the Hebrews; it passed over a sign of the Zodiac in 213 years;[1] and this 213 years was considered to be big with the fate of the land of the tabat (David), and of Jerusalem. The shortening of Moses, or the difference between $365\frac{1}{4}$ and $365\frac{1}{7}$ is $\frac{3}{28}$th parts of a day in a year, which amounts to three days in twenty-eight years, to an *abar* in 275 years, to a *Jacob* (147 days) in 1372 years, to $177\frac{3}{7}$ days in 1656 years, and to 365 days in 3420 years.

But as the year is only 365·24222 days, the error of Moses amounts to an error of 69,554 days in 700,000 years, to an *abar* in 297 years, to a *Jacob* (147 days) in 1486 years, and to an *Esau* (148 days) in 1490 years.

But the argument of Moses had another purpose than merely the art prophetic of that period; but a short digression to other national time-measures and revelations will enable us the more critically to appreciate the value of those hid in the Pentateuch.

The Nabonassar was a period 747; it was originally a moon-measure: thus $27\frac{1}{3} \times 27\frac{1}{3} = 747\frac{1}{9}$ days. This, resolved into an alap or apal, gives alternate moon-periods of 34 and 22.

The Amalekites had a similar sema of 746; other approximations were known as a sardanapal, a nana, etc.

---

[1] For period of 215, *see* Part II.

In the Rama, the period was 753; and the abal and ab were 33 and 23, or 34 and 22.

The different states of Greece had their distinctive measures of moon-periods; but the emergence of the Asiatic and African mystery about the prophetic AN-period led to a conflict of continental ideas.

The problem of time-meter became a regular problem: to measure time by moon measure, and preserve the necessary relation to sun measure, so as to insure a tropical year.

There were two solutions, or rather the problem became of this form: Find two numbers, whose sum is 1461, and whose product is 533,265.

The Sun Nabonassar was this:

$$747 + 714 = 1461$$
$$\text{and } 747 \times 714 = 533358.$$

These two periods make the quaternion 1461; this gives the average of 365¼ for one of four years.

The Amalika was 746 and 715: sum = 1461, product 533,390.

The Roma was 753 and 708: sum 1461, product 533,124. Here are the twin-brothers Romulus and Remus; the one as much above 730½ as the other was below, thus forming a true alap, the lupus of the myth.

The old olympiad of King Iphitus of Aelis was an eclipse register; it was 888 and 600.

The new olympiad was 776 and 687, a close approximation to the Lamech of Moses: 776 + 687 = 1463; mean year 365¾ days: it was an al-am-ap or am-al-ap, according to the use of the 776 or the 687.

The Lycurgus was a twin-evolute: 880 and 606: sum 1486, mean year 371½ days.

The Solon of 594 had the evolute 898, an approximation to the Mahalalæl of Moses: the sum 1492, product 533,412.

The shiners of Solon were Venus, checked by Mercury and Moon, and had special reference to a recurring eclipse.

The Abaram of 119 has an evolute of 4480;

The Zara aster of 238 has 2240;

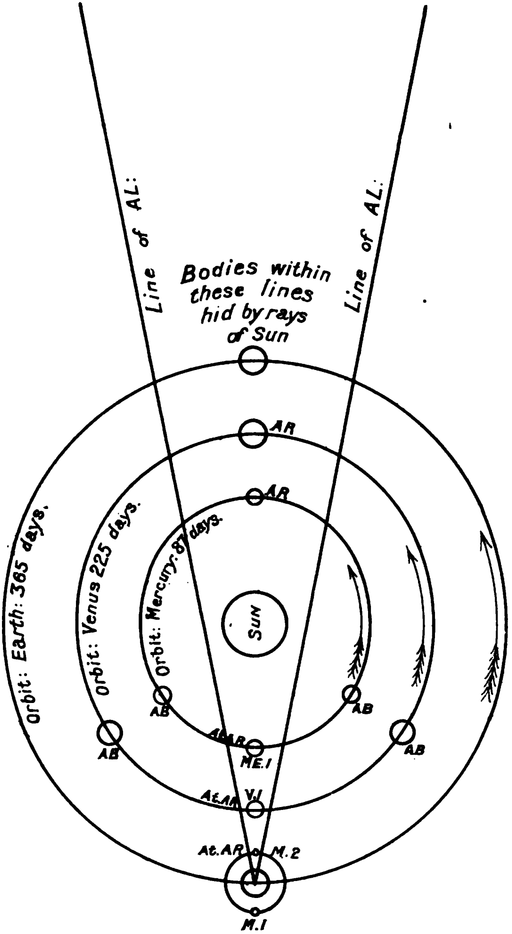
The Jupiter of 800 had the Juno of 666;

The Saturn of 756 had the Rhea or Tara 706;

The Mars of 780 had the wife 684.

The quaternions of Jupiter, Saturn, and Mars were 1466, 1462, and 1464; and the average year 366½, 365½, and 366 days. The annual forms of Jupiter and Saturn are about 400 and 378 days, and of their wives 333 and 353, which are triple forms of Mercury, or, more generally, plural forms of Thoth I. and Thoth II. Thus Mercury was the *goer* between gods, goddesses, and mankind, or the would-be gods. The periodicity of animals oversteps the crossings of the sun in some cases; thus, the period of the giraffe is fourteen months; the introduction of this as a *set-hu* was detested by the working populations of Egypt, as the annual festival was thereby postponed, and of less frequent occurrence. Herbs and plants and fruitful trees were sun-bound to the supreme ruler of the Pharaoh of Moses; but the formal demonstrations of the Hebrew Prophet, or rather his Redactions, evolved the traces of a higher Lord and God above all the gods of the land of Egypt.

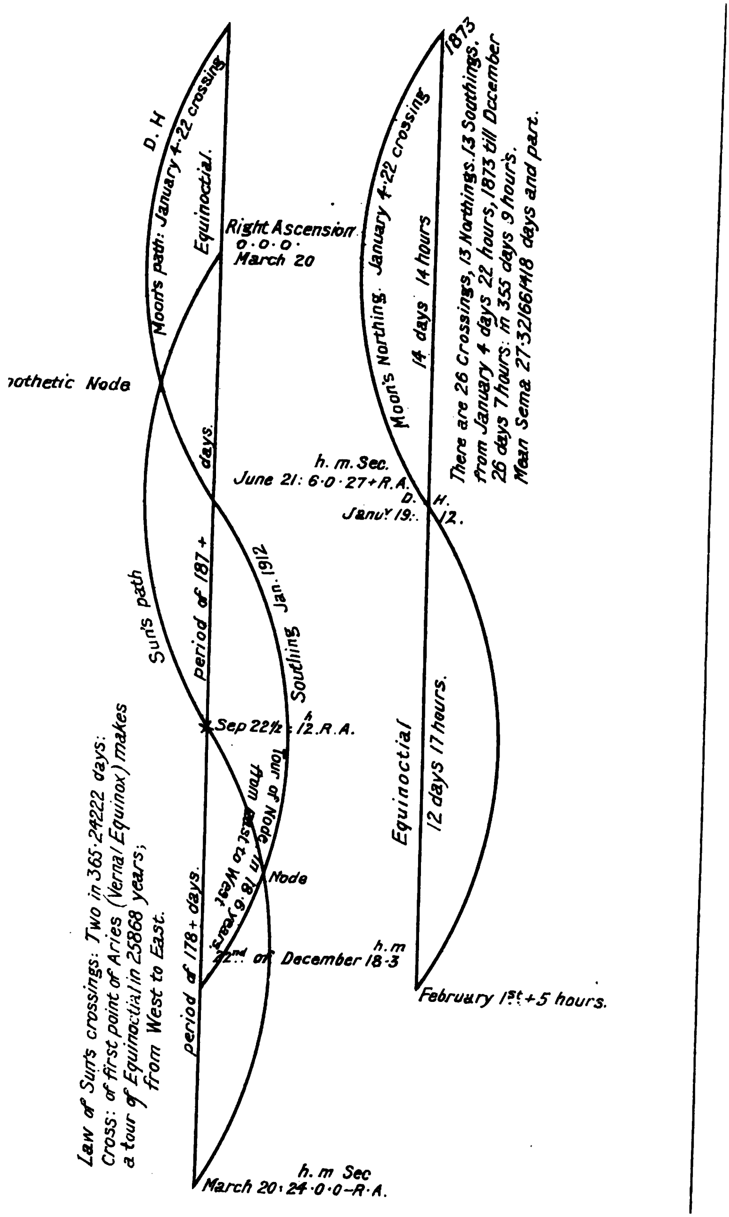
DIAGRAM I.



M.I position of moon, at full: at lunar eclipse:
M.2 position of moon, at new: at Solar eclipse:
V.I position of Venus, at I.C: at transit:
ME.I position of Mer. at I.C: at transit:
AB are periods of maximum elongation:
AR are positions of Superior Conjunction.
Orbits are elliptical: Sun in a focus.
Motions most rapid when nearest Sun.

N.B. These planets move as shown: the Synodic period of Venus or Mercury is time for return to similar and relative position with respect to Earth.

DIAGRAM II.


D. H
Moon's path: January 4·22 crossing
Equinoctial.
Right Ascension 0·0·0· March 20
othetic Node
days.
h. m. Sec. June 21: 6·0·27+R.A.
period of 187+
Sun's path
Southing Jan. 1912
Sep 22½ h 12.R.A.
Tour of Node from East to West in 18·6 years
Node
period of 178+ days.
h. m 22nd of December 18·3
h. m Sec March 20: 24·0·0–R·A.
1873
Moon's Northing. January 4·22 crossing
14 days 14 hours
D. H. Janu^y 19: 12.
Equinoctial
12 days 17 hours.
February 1st+5 hours.

Law of Sun's crossings: Two in 365·24222 days: Cross: of first point of Aries (Vernal Equinox) makes a tour of Equinoctial in 25868 years; from West to East.

There are 26 Crossings, 13 Northings, 13 Southings, from January 4 days 22 hours, 1873 till December 26 days 7 hours: in 355 days 9 hours. Mean Sema 27·32166418 days and part.

DIAGRAM OR TABLE III.

Note the crossing of the Jacab period of 147 days from Solar and Lunar columns. The Joseph includes the Jacab and usually 6 iri (sons?) of 177 days, making 1210 days; this is 11 × 110; occasionally there is a little brother, 177, swelling the period to 1387-8. The little brother is an ab-ain-ain or benne, or benoni.

The Ab-ar period of *Ab* and *Ar* of moon appears as the midwife between Esau × Jacab; occurs in the multiple form 147 (5 × 29·5), in the multiple forms 177 (6 × 29·5), and was the ruling shepherd king.

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Intervals: Lunar.	Intervals: Solar.	Lunar Intervals in Law.	Ab-ar-huma and J-ak-ab: Esau-twin	Iusiph: Benoni (ab-ai-nu) ab-ain-ain.
1820	Mar. 29	Mar. 14				147	
			177	177	177	is the	
	Sept. 22	Sept. 7				Solar	
				178	178	Jacab	
1821		Mar. 4				or	
			502	176	147	Lunar	
		Aug. 27				Jacab	
				178	177		
1822	Feb. 6	Feb. 21					
			177	176	177		177
	Aug. 2	Aug. 16					6
			177	149	177		1062
1823	Jan. 26	Jan. 12				Esau	1
				30			
		Feb. 11					1063
			178	147	178	Ab-ar	147
	July 23	July 8				Jacab	1210
				29			Joseph
		Aug. 6					
			177	148	177		
1824	Jan. 16	Jan. 1					
			177	176	177		
	July 11	June 26					
				177	147		
		Dec. 20	324				
				179	177		
1825	May 31	June 16					
			178	176	178		
	Nov. 25	Dec. 9					

Diagram III.

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Intervals: Lunar.	Intervals: Solar.	Lunar Intervals in Law.	Ab-ar-huma and J-ak-ab: Esau-twin	Iusiph: Benoni (ab-ai-nu) ab-ain-ain.
			177	178	177		1210
1826	May 21	June 5					
			177	148	177	Esau	
		Oct. 31					
				29		Ab-al	
	Nov. 14	Nov. 29					
			178	148	178	Jacab	
1827	May 11	April 26					
			176	177	176		
	Nov. 3	Oct. 20.					
				177	147		
1828		April 14					
			503	177	178		
		Oct. 8.					
				177	178		
1829	Mar. 20	April 3					
			177	178	177		
	Sept. 13	Sept. 28					1209
			177	148	177	Esau	
1830		Feb. 23					
				29		Ab-ar	
	Mar. 9	Mar. 24					
			177	147	177	Jacab	
		Aug. 18					
				30		Abar	
	Sept. 2	Sept. 17					
			177	148	177	Jacab	
1831	Feb. 26	Feb. 12					
			178	176	178		
	Aug. 23	Aug. 7					
				178	147		
1832		Feb. 1					
			502	177	177		
		July 27					
				177	178		
1833	Jan. 6.	Jan. 20					Joseph and Benjamin
			176·5	178	176·5		
	July 1-2	July 17					
			177	176·5	177		
	Dec. 26						

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Inter-vals : Lunar.	Inter-vals : Solar.	Lunar Inter-vals in Law.	Ab-ar-hu-ma and J-ak-ab : Esau-twin	Iusiph : Benoni (ab-ai-nu) ab-ain-ain.
1834		Jan. 9					1386·5
			177	148·5	177	Jacab	1209
	June 21	June 7					177·5
			178	176	178		
	Dec. 16	Nov. 30					
			176	178	176		
1835	June 10	May 27					
				177	148		
		Nov. 20	326				
				177	178		
1836	May 1	May 15					
			176	178	176		
	Oct. 24	Nov. 9					
			178	147	178	Jacab	
1837	Ap. 20	Ap. 5					
				29		Ab-ar	
		May 4					
			176·5	178	176·5		
	Oct. 13-4	Oct. 29					
			178	147	178	Jacab	
1838	Ap. 9-10	Mar. 25					
			176	177	176		
	Oct. 3	Sept. 18					
				178	147		
1839		Mar. 15					
			502	176·5	178		
		Sept. 7-8					
				178·5	177		
1840	Feb. 17	Mar. 4					
			178	176	178		
	Aug. 13	Aug. 27					
			176	178	176		
1841	Feb. 5	Feb. 21					
			178	147	178	Jacab	
		July 18					
				29		Ab-ar	
	Aug. 2	Aug. 16					
			177	148	177	Esau	
1842	Jan. 26	Jan. 11					

Diagram III.

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Inter-vals : Lunar.	Inter-vals : Solar.	Lunar Inter-vals in Law.	Ab-ar-hu-ma and J-ak-ab : Esau-twin	Iusiph : Benoni (ab-ai-nu) ab-ain-ain.
			177	178	177		
1842	July 22	July 8					
				176	147		
		Dec. 31					
			502·5	208	177·5	Tara	
1843		July 27					
				147	178		
	Dec. 6-7	Dec. 21					
			177	177	177		
1844	May 31-5	June 15					
			177	148	177	Jac-ab	
	Nov. 24-5	Nov. 10					
				29		Ab-ar	
		Dec. 9					
			177·5	148	177·5	Esau	
1845	May 21	May 6					
			176·5	177·5	176·5		
	Nov. 13-5	Oct. 30-1					
				176·5	177·5		
1846	•	Ap. 25					
			502·5	178	147		
		Oct. 20					
				177	178		
1847	Mar. 31	April 15					
			177	177	177		
	Sept. 24	Oct. 9					
			177	148	177	Esau	
1848	Mar. 19	Mar. 5					
				29		Ab-ar	
		April 3					
			178	147	178	Jacab	
		Aug. 28					
				30		Abar	
	Sept. 13	Sept. 27					
			176·5	148·5	176·5	Esau	
1849	Mar. 8-9	Feb. 22-3					
			177·5	176·5	177·5		
	Sept. 2	Aug. 18					
				178	147		
1850		Feb. 12					

Diagram III.

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Inter-vals : Lunar.	Iuter-vals : Solar.	Lunar Inter-vals in Law.	Ab-ar-hu-ma and J-ak-ab : Esau-twin	Iusiph : Benoni (ab-ai-nu) ab-ain-ain.
			502	176·5	177		
1850		Aug. 7-8					
				177·5	178		
1851	Jan. 17	Feb. 1.					
			177	177	177		
	July 13	July 28					
			178	177	178		
1852	Jan. 7	Jan. 21					
			176	148	176	Jac-ab	
	July 1	June 17					
			178	177	178		
	Dec. 26	Dec. 11					
			177	177	177		
1853	June 21	June 6					
				177	147		
		Nov. 30	325				
				177	178		
1854	May 12	May 26					
			176	178	176		
	Nov. 4	Nov. 20					
			179	177	179		
1855	May 2	May 16					
			176	177	176		
	Oct. 25	Nov. 9					
			177	148	177		
1856	April 20	April 5					
			176·5	177	176·5		
	Oct. 13-4	Sept. 29					
				177·5	147		
1857		Mar. 25-6					
			501·5	176·5	177		
		Sept. 18					
				178	177·5		
1858	Feb. 27	Mar. 15					
			178	176	178		
	Aug. 24	Sept. 7					
			177	149	177		
1859	Feb. 17	Feb. 3					
				29			
		Mar. 4					

Diagram III.

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Inter-vals : Lunar.	Inter-vals : Solar.	Lunar Inter-vals in Law.	Ab-ar-hu-ma and J-ak-ab : Esau-twin	Iusiph : Benoni (ab-ai-nu) ab-ain-ain.
			177	147	177		
1859	Aug. 13	July 29					
			178	177	178		
1860	Feb. 7	Jan. 22					
			176	178	176		
	Aug. 1	July 18					
				177	147		
1861		Jan. 11					
			503	177·5	178		
		July 7-8					
				176·5	178		
	Dec. 17	Dec. 31					
			177	178	177		
1862	June 12	June 27					
			177	147	177		
		Nov. 21					
				30			
	Dec. 6	Dec. 21					
			177·5	147	177·5		
1863	June 1-2	May 17					
			176·5	178	176·5		
	Nov. 25	Nov. 11					
				176·5	147		
1864		May 5-6					
			503	177·5	178		
		Oct. 30					
				177	178		
1865	April 11	April 25					
			176	177	176		
	Oct. 4	Oct. 19					
			178	148	178		
1866	Mar. 31	Mar. 16					
				30			
		April 15					
			177	176	177		
	Sept. 24	Oct. 8					
			177	149	177		
1867	Mar. 20	Mar. 6					
			177·5	176	177·5		
	Sept. 13-4	Aug. 29					

	Dates of Lunar Eclipses.	Dates of Solar Eclipses.	Inter-vals : Lunar.	Inter-vals : Solar.	Lunar Inter-vals in Law.	Ab-ar-hu-ma and J-ak-ab : Esau-twin	Iusiph : Benoni (ab-ai-nu) ab-ain-aiu
				178	147		
1868		Feb. 23					
			501·5	177	177		
		Aug. 18					
				176·5	177·5		
1869	Jan. 27	Feb. 10-1					
			176·5	177·5	176·5		
	July 22-3	Aug. 7					
			178·5	177	178·5		
1870	Jan. 17	Jan. 31					
			176·5	148·5	176·5		
		June 28-9					
				29·5			
	July 12-3	July 28					
			177·5	147	177·5		
		Dec. 22					
			177	177·5	177		
1871	Jan. 6						
				177·5	147		
	July 2	June 17-8					
			325				
		Dec. 12					
				177	178		
1872	May 22	June 6					
			177	177	177		
	Nov. 15	Nov. 30					
			178	177	178		
1873	May 12	May 26					
			177	178	177		
	Nov. 4	Nov. 20					
			178	147	178		
1874	May 1	April 16					
			177	177	177		
	Oct. 25	Oct. 10					
				178			
1875		April 6					
				176			
		Sept. 29					

[illegible]

IN THE EDINBURGH UNIVERSITY LIBRARY